CISTER
Research Centre in
Real-Time & Embedded
Computing Systems

Technical Report

IPDeN 2.0: Real-time NoC with selective flit deflection and buffering (Appendix)

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Abstract

None

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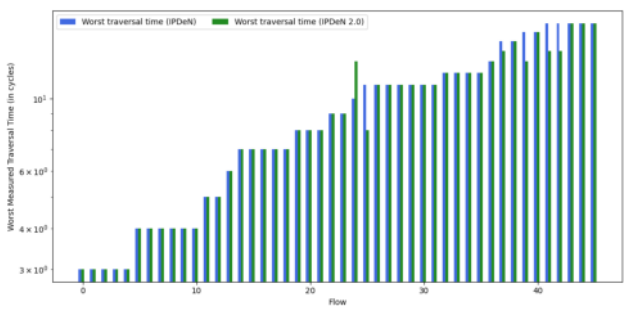
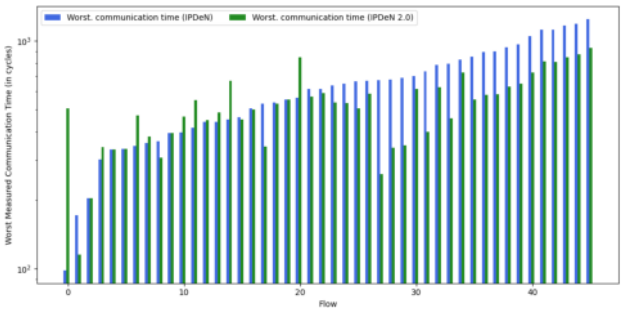
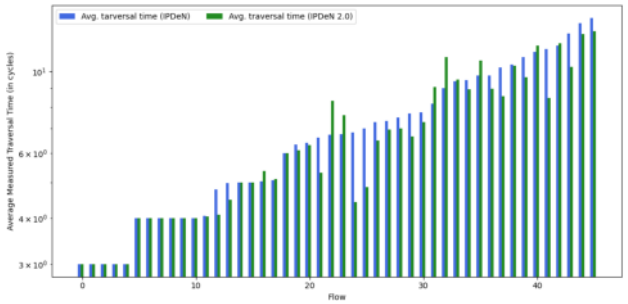
APPENDIX



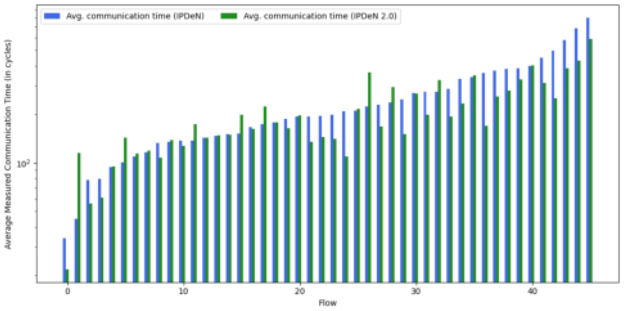
(a) Worst measured traversal time.



(b) Worst measured communication time.

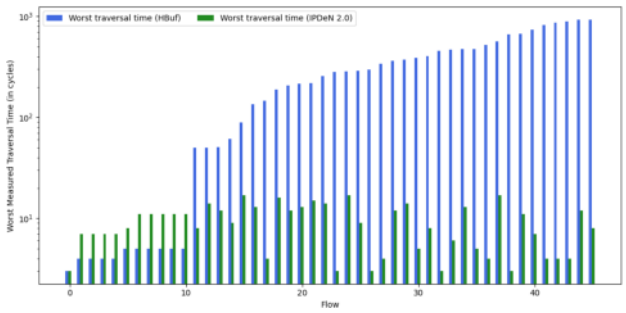


(c) Average measured traversal time.

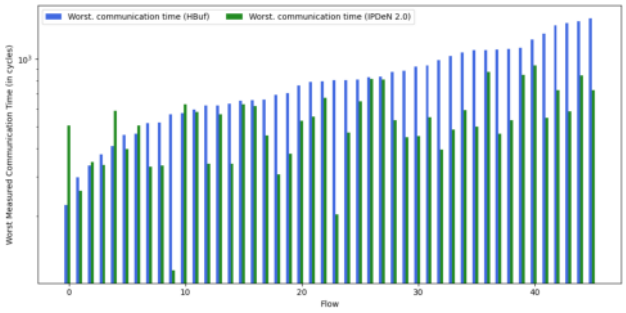


(d) Average measured communication time.

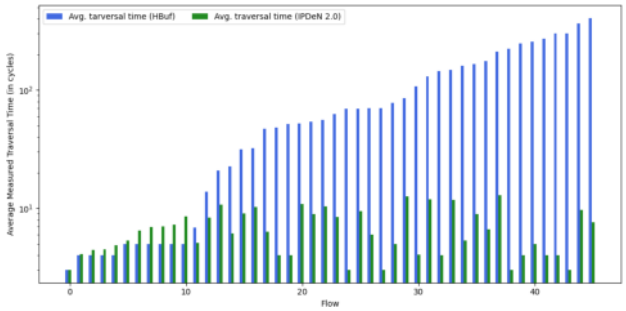
Fig. 1. IPDeN 2.0 vs IPDeN (Synthetic test case).



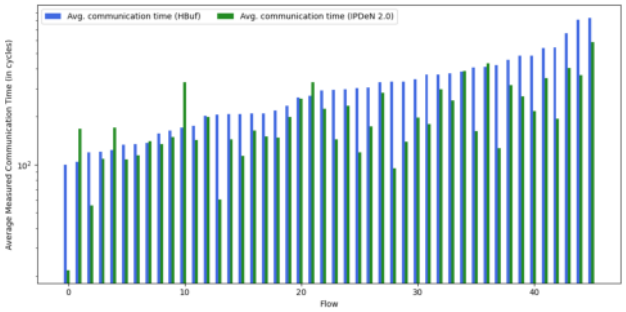
(a) Worst measured traversal time.



(b) Worst measured communication time.

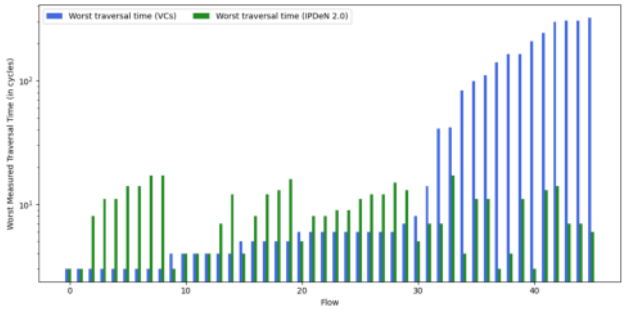


(c) Average measured traversal time.

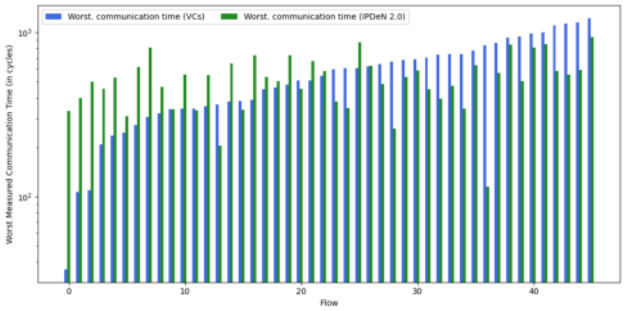


(d) Average measured communication time.

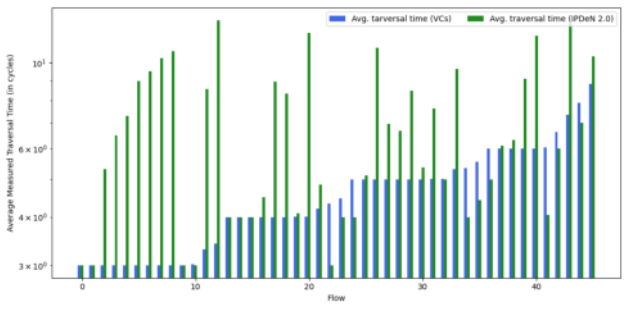
Fig. 2. IPDeN 2.0 vs 128-deep HopliteBuf (Synthetic test case).



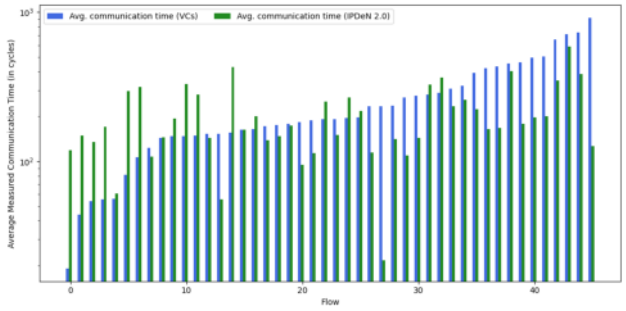
(a) Worst measured traversal time.



(b) Worst measured communication time.



(c) Average measured traversal time.



(d) Average measured communication time.

Fig. 3. IPDeN 2.0 vs VCs (Synthetic test case).

TABLE I
GAIN ON THE WMTT (ORION TEST CASE).

% of gain	Number of flows		
	IPDeN 2.0 vs IPDeN	IPDeN 2.0 vs 128-deep HopliteBuf	IPDeN 2.0 vs VC
0%	126	53	29
(0%,10%]	19	2	1
(10%,20%]	15	0	12
(20%,30%]	12	2	2
(30%,40%]	11	1	4
(40%,50%]	4	1	4
(50%,60%]	0	4	3
(60%,70%]	0	2	4
(70%,80%]	0	10	2
(80%,90%]	0	20	8
(90%,100%]	0	60	32

TABLE II
GAIN ON THE WMCT (ORION TEST CASE).

% of gain	Number of flows		
	IPDeN 2.0 vs IPDeN	IPDeN 2.0 vs 128-deep HopliteBuf	IPDeN 2.0 vs VC
0%	85	41	0
(0%,10%]	59	14	8
(10%,20%]	14	8	7
(20%,30%]	10	14	10
(30%,40%]	7	17	18
(40%,50%]	3	14	46
(50%,60%]	1	22	15
(60%,70%]	0	14	10
(70%,80%]	0	3	21
(80%,90%]	0	3	7
(90%,100%]	0	1	1

TABLE III
GAIN ON THE AMTT (ORION TEST CASE).

% of gain	Number of flows		
	IPDeN 2.0 vs IPDeN	IPDeN 2.0 vs 128-deep HopliteBuf	IPDeN 2.0 vs VC
0%	74	51	28
(0%,10%]	47	8	20
(11%,20%]	36	7	12
(20%,30%]	16	2	4
(30%,40%]	6	6	7
(40%,50%]	2	4	4
(50%,60%]	1	7	0
(60%,70%]	0	13	3
(70%,80%]	0	12	0
(80%,90%]	0	24	1
(90%,100%]	0	20	0

TABLE IV
GAIN ON THE AMCT (ORION TEST CASE).

% of gain	Number of flows		
	IPDeN 2.0 vs IPDeN	IPDeN 2.0 vs 128-deep HopliteBuf	IPDeN 2.0 vs VC
0%	46	35	0
(0%,10%]	106	31	8
(10%,20%]	18	23	13
(20%,30%]	7	20	18
(30%,40%]	0	7	26
(40%,50%]	0	12	67
(50%,60%]	0	11	16
(60%,70%]	0	7	11
(70%,80%]	0	0	4
(80%,90%]	0	1	4
(90%,100%]	0	1	0

TABLE V
LOST ON THE WMTT (ORION TEST CASE).

% of lost	Number of flows		
	IPDeN 2.0 vs IPDeN	IPDeN 2.0 vs 128-deep HopliteBuf	IPDeN 2.0 vs VC
(0%,10%]	0	0	0
(10%,20%]	0	2	6
(20%,30%]	0	1	4
(30%,40%]	0	2	3
(40%,50%]	0	2	8
(50%,60%]	0	1	3
(60%,70%]	0	0	0
(70%,80%]	0	3	6
(80%,90%]	0	3	5
(90%,100%]	0	3	11
(100%,inf]	0	15	40

TABLE VI
LOST ON THE WMCT (ORION TEST CASE).

% of lost	Number of flows		
	IPDeN 2.0 vs IPDeN	IPDeN 2.0 vs 128-deep HopliteBuf	IPDeN 2.0 vs VC
(0%,10%]	5	19	7
(10%,20%]	1	4	6
(20%,30%]	1	3	5
(30%,40%]	0	5	0
(40%,50%]	0	2	2
(50%,60%]	0	0	0
(60%,70%]	1	0	4
(70%,80%]	0	0	4
(80%,90%]	0	0	1
(90%,100%]	0	0	1
(100%,inf]	0	3	14

TABLE VII
LOST ON THE AMTT (ORION TEST CASE).

% of lost	Number of flows		
	IPDeN 2.0 vs IPDeN	IPDeN 2.0 vs 128-deep HopliteBuf	IPDeN 2.0 vs VC
(0%,10%]	4	9	12
(10%,20%]	0	10	20
(20%,30%]	0	4	7
(30%,40%]	0	2	4
(40%,50%]	0	2	12
(50%,60%]	0	0	7
(60%,70%]	0	3	5
(70%,80%]	0	0	6
(80%,90%]	0	0	1
(90%,100%]	0	0	7
(100%,inf]	0	3	29

TABLE VIII
LOST ON THE AMCT (ORION TEST CASE).

% of lost	Number of flows		
	IPDeN 2.0 vs IPDeN	IPDeN 2.0 vs 128-deep HopliteBuf	IPDeN 2.0 vs VC
(0%,10%]	7	20	1
(10%,20%]	3	10	2
(20%,30%]	0	3	1
(30%,40%]	0	2	6
(40%,50%]	0	0	0
(50%,60%]	0	1	2
(60%,70%]	0	1	1
(70%,80%]	0	1	2
(80%,90%]	0	0	0
(90%,100%]	0	0	1
(100%,inf]	0	1	4